



Landscape, Floriculture, and Ornamentals News

*A Newsletter for the Professional
Landscape, Floriculture, and
Ornamentals Industries*

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Contents

- New editors and changes for *Horticulture Digest*
- AGNET-HAWAII: information at your fingertips
- About research
- A dirty dozen: the 12 most frequently encountered landscape diseases
- Where to go for . . .
- Do root stimulators help transplanted plants?
- New CTAHR publications
- Notice to certified pesticide applicators
- Use of benzyladenine (BA) to extend vase life of tropical flowers
- Anthurium 'Tropic Fire'
- Fungicidal control of sphaceloma scab disease on pincushion protea
- Evaluating *Leucospermum* for sphacelom scab
- Enhanced winter flowering of plumeria
- Miticides evaluated in Alabama
- New disease found on Mainland oleander
- Training course for pesticide applicators

New Editors and Changes for *Horticulture Digest*

David Hensley and Kenneth Leonhardt
CTAHR Extension Horticulture Specialists

Dr. Fred Rauch faithfully served as editor of *Horticulture Digest* for 20 years. Fred retired in July and has relocated to his new home in Washington. *Horticulture Digest* has built up a large following and has been a valuable tool for getting information to the industry.

We have agreed to take over the *Horticulture Digest* newsletter. We need and ask for your help and assistance in continuing this project. We feel the need to make some changes to fit our styles and the audience.

Horticulture Digest evolved from a general topic publication to one serving primarily the ornamentals industry. We have developed the *Landscape, Floriculture, and Ornamentals News* to help address the information needs of landscape, nursery, floriculture, and ornamentals industry professionals. We will produce *Landscape, Floriculture, and Ornamentals News* quarterly, at least in the beginning.

Landscape, Floriculture, and Ornamentals News will highlight developments in research, technology, production, management, and breeding in the green industries. We want to continue a calendar of events, meetings, etc., so please let us know what is coming up. Newsletters are a lot of work. Please give us feedback and let us know how this newsletter can better serve you.

We are using several combined mailing lists for this first issue, so you may receive multiple copies. Sorry. We are using the first issue to establish a new mailing list. By law, mailing lists using Cooperative Extension postage must be purged (sounds pretty rough) annually. What this really means is that we must make an effort to make sure that you are still interested in receiving the materials and remove bad address and duplicates.

The last page of this issue is a brief survey of who you are and what you do. Please return it to the address listed. The new mailing list will be built from the returns. If you don't mail it back, this will probably be the last issue you will receive. If you receive multiple copies, please send back only one. Please feel free to make copies and pass them to anyone who you feel might be interested in receiving *Landscape, Floriculture, and Ornamentals News*. The survey information will be confidential and only serves to give us a better handle on the readership so we can develop future issues.

Please let us know if you have any questions, comments, or concerns.

Ken (808-956-8909 [leonhard@hawaii.edu])

Dave (808-956-2150 [dhensley@hawaii.edu])

www

AGNET-HAWAII: Agricultural and Horticultural Information at your Fingertips

Ruth Iwata
CTAHR Extension Specialist
Beaumont Agriculture Research Center, Hilo

A lot of agricultural and horticultural information is now available at *no cost* from UH CTAHR. All you need is a computer and modem. No computer? No problem, well a little problem. You can access this information from free computers available at local libraries.

AGNET-Hawaii is an electronic bulletin board system (BBS) on a computer housed at the Beaumont Agriculture Research Center in Hilo. This computer can be accessed by phone from anywhere in the state. Many UH CTAHR Cooperative Extensive Service publications and conference proceedings are stored in this computer.

Since June 1996, the AGNET-Hawaii computer has been connected to the Hawaii FYI statewide system. Access to Hawaii FYI is *free*. Anyone, with a computer and modem, can dial a local or 1-800 number to access the AGNET computer. Upon contacting Hawaii FYI via computer, you are presented a list of services to choose. One of these, #12, is UH CTAHR.

Phone numbers for the Hawaii FYI system are as follows:

| | |
|--------------------|----------------|
| Oahu: | (808) 587-4800 |
| Hawaii: | (808) 974-6640 |
| Maui: | (808) 984-2000 |
| Kauai: | (808) 274-3600 |
| Molokai and Lanai: | 1-800-243-7133 |

The modem settings should be N (no parity), 8 (data bits), and 1 (stop bit).

After selecting AGNET, access the information files by selecting "L" for File Libraries. Another service on AGNET is timely announcements of events, programs, and meetings. You can write electronic messages (email) to other people who use the AGNET system. You will also be able to write email in a "public" area called "Forums" where everyone is welcome to read, respond, or add new thoughts.

Suggestions for additional services or uses for AGNET are always welcome. For example, if there is enough demand, a special forum area can be set up as a trading post (listing items needed and for sale) for plants or other agricultural materials and services. Another forum could be set up for agricultural suppliers to issue

information, field questions, or whatever. All users are encouraged to dive in and write messages in the forums.

This service is sponsored by UH CTAHR and supported by the Cooperative State Research Education and Extension Service, USDA, special project number 94-EATP-1-0049.

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## About Research

David Hensley,  
CTAHR Extension Landscape Specialist

*About Research* will be a regular feature of *Landscape, Floriculture, and Ornamentals News*. There is an enormous volume of research of interest to Hawaii's Landscape and Ornamentals Industry conducted across the world. This information is published in technical and research journals. Unfortunately, most of this research takes a long time to reach those who can actually use the information. We monitor several journals and other publications and will feature abstracts of papers (minus the scientific jargon) that have potential interest for the Hawaii green industries. Some of the plant species may be unfamiliar, but the information and technology may be useful. If you would like a copy of the original paper, please write and give the citation and we will try to find it.

—  
*Effects of four compaction remediation methods for landscape trees on soil aeration, mechanical impedance and tree establishment.* 1995. S.D. Day, N.L. Bassuk and H. van Es. *Journal of Environmental Horticulture* 13(2).

Landscape trees planted in heavily compacted soils around newly constructed buildings or in urban areas frequently die or decline prematurely. Four techniques for improving tree establishment were studied: peat-amended backfill; vertical drainage mat panels; radiating trenches filled with sandy loam soil; and vertical, gravel-filled sump drains. Sugar maple; a species sensitive to soil compaction, and the less sensitive Callery pear were planted bare-root into treatments in a compacted silty clay loam soil. Controls were backfilled with native soil. Shoot and root growth, soil compaction, and bulk density were measured over three growing seasons. Soil air oxygen content was monitored for one year.

Shoot growth of pears was greatest for treatments that decreased mechanical impedance (soil trenches and amended backfill) and least for treatments that did not



(controls and vertical drains). Drainage mats showed intermediate growth. Root growth correlated with shoot growth. Length of small diameter roots was greater for pears in soil trench treatments than for controls. Vertical drainage mats and vertical gravel-filled sump drains increased oxygen content in surrounding soil. Regardless of treatment, all oxygen levels were close to atmospheric levels and never lower than 10%. Maple death was high and no treatments were effective. Work was conducted at Cornell Univ.

**Frequency of Drive® (Quinclorac) treatments on common bermudagrass tolerance and on large crabgrass control.** 1995. B. Jack Johnson. *Journal of Environmental Horticulture*, 13(2).

When a postemergence herbicide is used to control large crabgrass [*Digitaria sanguinalis*] in common bermudagrass, it should maintain optimum weed control for 8 to 10 weeks without injury to the turf. Drive® applied at 0.25 lb ai/A in early May and repeated at the same rate at a 2-week interval controlled 85% of the large crabgrass for 16 weeks in 1993 and 70% for 10 weeks in 1994. Weed control in 1994 was 96% for 17 weeks when the herbicide was applied at 0.25 lb ai/A in three applications. The maximum bermudagrass injury in 1993 was 27% from Drive® at 0.25 lb ai/A in each of two applications at 2-to 4-week intervals compared to 33% when a single 0.5 lb ai/A application. Bermudagrass treated initially with Drive® at 0.25 lb ai/A was injured more in 1994 than in 1993. Bermudagrass injury was 40% when the second application was delayed until mid-to late-June either year or when the herbicide was applied in three applications during May and June 1994. Work conducted at Dept. of Crop & Soil Sci., Univ. of GA. Georgia Station, Griffin, GA.

**Root barriers affect root distribution.** E.F. Gilman. *Journal of Arboriculture* 22(3)

No roots of live oak (*Quercus virginiana*) or sycamore (*Platanus occidentalis*) went through Biobarrier™ during a 3-year period after planting. Most roots on both species without a barrier were located in the top 12 in of soil, and root number decreased with increasing soil depth. Roots were located at deeper soil depths beyond the Biobarrier™. The roots 6 in from the Biobarrier™ were mostly 12 to 18 in below the soil surface. Eighty percent of oak roots and 72% of sycamore roots greater than 0.12 in in diameter 3 ft from the trunk without a barrier were in the top 12 in of soil, whereas,

only 42% oak and 38% sycamore of roots were in the top 12 in for trees with the root barrier. Biobarrier™ forced roots deeper in the soil but in the high water table soil in this study, many roots returned to the soil surface by the time they had grown 4 ft away from the barrier.

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## A Dirty Dozen: The 12 Most Frequently Encountered Diseases in the Landscape

Desmond Ogata

Plant Disease Clinic

CTAHR-Agricultural Diagnostic Service Center

CTAHR's Plant Disease Clinic identifies diseases brought in by homeowners, growers, and landscape professionals. The following are 12 of the most frequent diseases encountered in the Plant Disease Clinic, in no particular order. You may want to consider this when selecting plants for production and landscape use.

1. Periwinkle (*Catharanthus roseus*)—foliar blight caused by *Phytophthora nicotianae*. Excessive moisture and splashing water promote disease outbreaks.

2. Oyster plant (*Rhoeo spathaceae*)—crown blight caused by *Phytophthora nicotianae*. Plants melt out from center outward. Excessive moisture and splashing water promote the disease.

3. Dwarf Mondo grass (*Ophiopogon japonicus*)—root rot caused by *Pythium splendens*. The dwarf selection is more susceptible than the longerleafed variety. Symptoms begin as a tip burn followed by a gradual yellowing and browning. Eventually the crown will easily separate from the base when pulled. Heavy soils and poor drainage promote outbreaks of this disease.

4. Joyweed (*Alternanthera amoena*)—foliar and root blight caused by *Rhizoctonia solani*. The fungus attacks both roots and foliage during periods of high moisture and warm, humid conditions.

5. Hemigraphis (*Hemigraphis colorata*)—nematode damage caused by the rootknot nematode. Obvious signs are the galling of the root tissues. Above ground symptoms range from stunting, declining growth, to thinning out.

6. *Spathiphyllum* sp.—root and crown rot caused by *Cylindrocladium spathiphylli*. Older leaves begin to droop and yellow from base. By this time, however, the roots may be completely rotted. Widespread plant death results when the fungus becomes established in planting beds. Fungus may come in with infected nursery stock.

7. *Synqonium podophyllum*—bacterial leaf blight caused by *Xanthomonas campestris* pv. *dieffenbachiae*. Foliar leaf blight occurs in wet humid locations. Water soaked symptoms appear on the leaf margin and advance inward. As the bacteria advance, the already infected tissues become necrotic and paper thin. Symptoms may be angular in appearance due to the vein orientation within the leaves.

8. *Canna* sp.—rust fungus caused by *Puccinia* sp. Orange colored pustules appear on the lower leaf surface. Damage may range from isolated unsightly symptoms to severe. Splashing water on leaves helps disseminate spores and encourages reinfection on healthy leaf tissue.

9. *Plumeria* sp.—rust fungus caused by *Coleosporium plumeriae*. Bright orange colored pustules on lower leaf surface. Rubra-type hybrids are more susceptible than the Singapore-type hybrids. Heavy infestation will cause premature defoliation. The damage is seasonal, appearing mostly during wetter months.

10. Hearts and flowers (*Aptenia cordifolia*)—root rot caused by *Pythium splendens*. This disease causes a melting out where plants are heavily irrigated and soils are heavy or compacted.

11. Leea (*Leea coccinea*.)—*Phytophthora* stem and foliar blight caused by *Phytophthora nicotianae* fungus. Splashing water and densely planted areas are prone to infection.

12. Roses (*Rosa* sp.)—two major foliar problems exist in Hawaii. Black spot, caused by the fungus *Diplocarpon rosae*, begins as yellow spots, eventually darkening to almost black spot (hence the name). Powdery mildew, caused by the fungus *Oidium* sp., covers leaves with a powdery mat. Both disease cause leaf drop during wet and humid periods.

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## Where to go for . . .

David Hensley

CTAHR Landscape Extension Specialist

### A soil test:

Ag Diagnostic Service Center  
Sherman 126 UH ☎956-5434

### Insect or disease problem identification:

Ag Diagnostic Service Center  
(Plant Disease Clinic-Insect Identification)  
Sherman 126 UH ☎956-5434

### General gardening or landscape questions:

|            |                                            |           |
|------------|--------------------------------------------|-----------|
| Big Island | Kona Extension Office                      | ☎322-2718 |
|            | Hilo Extension Office                      | ☎959-9155 |
|            | Honokaa Extension Office                   | ☎775-0369 |
|            | Kamuela Extension Office                   | ☎885-7318 |
| Oahu       | Honolulu Extension Office                  | ☎956-7138 |
|            | Kaneohe Extension Office                   | ☎247-0421 |
|            | Pearl City Ext Office and<br>Garden Center | ☎453-6050 |
|            | Wahiawa Extension Office                   | ☎622-4185 |
| Maui       | Maui Extension Office                      | ☎244-3242 |
| Molokai    | Molokai Extension Office                   | ☎567-6833 |
| Kauai      | Kauai Extension Office                     | ☎274-3471 |

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## Do Root Stimulators Help Transplanted Plants?

David Hensley

CTAHR Landscape Extension Specialist

There is an array of concoctions available to gardeners and industry professionals that claim to reduce transplant shock, promote growth, and enhance root development, according to Dr. Chris Starbuck, Extension Specialist, University of Missouri, in a recent newsletter article. Some "root stimulators" contain known growth-regulating materials such as indolebutyric acid (IBA) or naphthalene acetic acid (NAA). Others contain vitamins, such as thiamin (B1), while other products contain kelp extract, humic acids, and "co-enzymes."

Most published articles on root stimulators are based on testimonials from satisfied users and manufacturers' representatives. It is difficult to find published studies based on research using these products. "In some cases, one suspects that the manufacturer has latched on to a published study and stretched the conclusions beyond reasonable bounds," Dr. Starbuck comments.

Looking at some of the constituents of root stimulators, there is no question that auxin-type growth regulators like IBA or NAA can promote rooting in many species. These chemicals are commonly found in rooting compounds used by nurseries. Auxins have also promoted initiation of new roots of transplanted trees and shrubs in some situations. In a study conducted by Starbuck, the number of lateral roots of bare-root roses was doubled when dipped in an IBA solution before potting. Increased root formation generally requires at least 1,000 parts per million (ppm) (0.1 percent) IBA. The IBA concentration in root stimulators is below 100



ppm after recommend dilution. It is conceivable that concentrations as low as 100 ppm might have some effect if used as a root dip for some bare-root plants, but there is no research to support this idea. Starbuck doubts any possible effect when the materials are used as soil drenches.

According to Dr. Starbuck, there is some evidence supporting the idea that vitamin B1 (thiamin) may promote rooting. Swiss research showed that thiamin can be taken up by plant roots. Some older literature indicates that this vitamin has root-promoting activity of a few species at concentrations similar to those of diluted root-stimulator products (about 10 ppm). Research underway at the University of Arizona by Dr. Jimmy Tipton, however, has failed to show any positive response with *Dianthus* using eight commercial products.

Other products contain "humic substances" and kelp extracts. The humic material is similar to the "compost tea" used by some organic gardeners, Starbuck said. There have been some positive increases in root density of a cool-season grass sod using some humic materials in Nebraska. I have not seen published research results involving woody or herbaceous plants, however.

I was born and raised in Missouri. I generally wait for such products to "Show-Me." I want to see results carefully analyzed, credible, controlled research studies, rather than testimonials or manufacturer's claims, before I place any stock in these materials. Dr. Starbuck speculates that the tiny bottles of root stimulators may work like Dumbo's magic feather. They give the landscaper or gardener confidence, and maybe nothing else.

Starbuck relates the story of a nursery owner who gives his customers little white transplant pills. He will not will not guarantee plants unless the customer uses the pills. The tablets are dissolved in 2 gallons of water and applied to the root zone each week for the first month of planting. The customer is thereby induced to provide the most important chemical needed to guarantee transplant success: water.

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## New Publications from CTAHR

Hibiscus erineum mite. Instant Information 18.

Salt and wind tolerance of landscape plants for Hawaii.

Instant Information 19.

Chemical weed control recommendations for turfgrasses in Hawaii. Instant Information 20.

Common lawn grasses for Hawaii. Instant Info. 22.

Coconut palms from seed. CTAHR Fact Sheet OF-23.

These and other publications can be downloaded from the CTAHR Web site at:

<http://www.ctahr.hawaii.edu/publications/freepubs/>

### Also:

Anthurium cut flower breeding and economics. (A. Kuehnle, J. Halloran, H. Kamemoto, J. Lichty, T. Amore, and N. Sugii.) Research Extension Series 165. 8 p.

This publication and the others listed above may be ordered by calling the CTAHR Publications Request Line (808-956-7046) or your local CES office.

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## Notice to Pesticide Applicators

The Hawaii Department of Agriculture is embarking on a new method of tracking recertification credits beginning January 1, 1997. DOA will be issuing new certification cards to new and current cardholders from September 9, 1996, through December, 1996. Please note the following

1. If your card expires after December 31, 1996 and you will be earning recertification credits by attending classes, you must obtain a new card by December 31, 1996.

2. If your card expires prior to December 31, 1996, or you do not plan to earn recertification credits by attending classes, you do not need a new card.

3. Old cards will be adequate for the purchase and use of restricted-use pesticides. New cards are important for having your credits properly recorded.

To obtain a new card make an appointment with one of the following Department of Agriculture offices: Hawaii: 933-4447, Maui: 871-5656, Oahu: 9739401, Kauai: 241-3411.

When scheduled, bring the following:

1. A picture identification.
2. Your old certification card.
3. A glossy print photo of yourself to be put onto your new card. The photo must be no larger than 1 inch by 1 inch.

You may cut a larger photo 1 inch by 1 inch if you wish. There will be no charge for those surrendering their old cards. Others will be charged \$5.00 for a duplicate certification.

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## Use of Benzyladenine (BA) to Extend the Vase Life of Hawaii's Tropical Flowers

Robert Paull

CTAHR Dept. Plant Molecular Physiology

A ten-minute dip or spray with 200 ppm benzyladenine (BA) solution can increase the vase life of some anthurium varieties and heliconia by up to 140%. The treatment is simple and cost less than 0.04 cents per flower. No improvement in vase life was found with bird of paradise and oncidium, and vase life was reduced with dendrobium orchids.

Current work is looking at the seasonal responsiveness of tropical flowers to BA treatment, varietal responses, and optimum BA concentration for several flowers. Preliminary results suggest that there is a marked seasonal difference in responsiveness to BA. There is less response to BA applied to flowers that develop in the cool season. Detergents in the spray do not enhance response to BA. BA may need to be applied soon after harvest for maximum benefit.

For a more detailed report contact Robert E. Paull at telephone 956-7369 or fax 956-3542.

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## Anthurium 'Tropic Fire'—A New Potted Plant Cultivar developed by CTAHR

'Tropic Fire' was made from a cross between a species hybrid and a cultivated variety developed and patented by the University of Hawaii. All propagations that flowered have been true to the original type in plant and flower characteristics, demonstrating that the combination of characteristics are maintained through successive clonal generations.

*Tropic Fire's* attractive glossy, dark green, heart-shaped foliage highlights a vivacious, glossy, bright red spathe carried about 90 degrees from the flower stem axis, with open lobes, flat or slightly recurved, and a contrasting yellow upright spadix. The cultivar propagates easily and rapidly to form multiple high-yielding flowering shoots which renders it potentially well-suited for cut flower and flowering potted plant production.

Desirable horticultural characteristics:

- Tolerance to the systemic phase of bacterial blight caused by *Xanthomonas campestris* pv. *dieffenbachiae*

- Resistance of the spadix to anthracnose (black-nose) caused by *Colletotrichum gloeosporioides*
- Easily micropropagated using conventional methods
- Fast growth. Approximate finish time for 6 inches is 7 months
- High blossom yield of flowers with highly marketable color
- Excellent flower life on the plant and in the vase
- Retention of flower color with age

A plant patent has been filed with the U.S. Patent and Trademark office. The OTED at UH has licensed Twyford (Santa Paula, CA) to produce and market this proprietary cultivar. Hawaii growers will have a one year lead time of exclusive access to this new cultivar. For additional information contact: Office of Technology Transfer and Economic Development, Univ. of HI, 2800 Woodlawn Dr., Suite 280, Honolulu, HI 96822.

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## Fungicidal Control of *Sphaceloma* (Elsinoe) Scab Disease on Pincushion Protea (*Leucospermum*)

N.M. Nagata<sup>1</sup>, S.J. Ferreira<sup>2</sup>, K.W. Leonhardt<sup>2</sup>, and C.S. Hashimoto<sup>3</sup>

<sup>1</sup>Junior Researcher, <sup>2</sup>Extension Specialist, and <sup>3</sup>County Agent, CTAHR

Elsinoe scab disease was first confirmed in Hawaii on pincushion protea in 1990. The disease occurs primarily on young growing stem and leaf tissues, which become less susceptible as they mature. Infected stems develop brown, raised, cracked spots with a scabby appearance. On highly susceptible plants, the disease can spread throughout the stem causing it to become twisted and distorted. Leaf symptoms appear as raised wart-like growths that may join to form larger lesions. When not controlled this disease reduces yields of marketable cut blossoms.

Many farmers avoid spraying pesticides regularly in order to reduce maintenance costs. This practice has resulted in the quality of these plants and the viability of many farms to decline. Our study has shown that scab can be easily controlled by applying fungicides every 2 wk during its vegetative growth. Even severely diseased plants were rejuvenated by pruning and protecting the new shoots with these fungicides. To minimize fungicide use, growers may choose to stop spraying after flower initiation. At this stage, the stem and leaf tissues



are beginning to hardening off and are relatively resistant to infection.

*Leucospermum* 'Hawaii Moon' was selected for this study because of its high susceptibility to *Sphaceloma* scab. This cultivar was developed by the University of Hawaii in 1979 and later released to farmers for commercial cultivation. Since the outbreak of scab, growers have stopped planting this cultivar in favor of other more tolerant hybrids.

In fields trials, captan, chlorothalonil, propiconazole, benomyl, mancozeb, and iprodione were highly effective in controlling *Sphaceloma* stem and leaf scab on *Leucospermum* 'Hawaii Moon'.

Overall, captan was superior in reducing the incidence and severity of stem and leaf scab. Only 3 out of 160 stems (1.9%) and 5 of 160 leaves (3.1%) became infected with very mild symptoms. At today's prices, captan is relatively inexpensive in comparison to the other fungicides. The cost to farmers to protect their protea fields with captan would be approximately \$300-\$400/acre/year. The disadvantage of using this chemical is the long, 4 day re-entry period which might interfere with harvesting and the management of these fields. Currently, captan is not registered for proteas; however, its producer has indicated a willingness to support a special local needs registration for growers in Hawaii.

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## Evaluating *Leucospermum* for *Sphaceloma* (Elsinoe) Scab Resistance

N.M. Nagata<sup>1</sup>, S.J. Ferreira<sup>2</sup>, K.W. Leonhardt<sup>2</sup>, and C.S. Hashimoto<sup>3</sup>

<sup>1</sup>Junior Researcher, <sup>2</sup>Extension Specialist, and <sup>3</sup>County Agent, CTAHR

Two species and 15 hybrid *Leucospermum* including eight commercial cultivars, were evaluated for *Sphaceloma* (elsinoe) scab resistance at the Kula Agricultural Research Center on Maui. The plants were rated immune (no infection), resistant, susceptible, or highly susceptible to the disease.

None of the hybrids were immune. Among commercial cultivars, 'Veldfire' and 'Rachel' were resistant; 'Cloud Bank', 'Hawaii Star', and 'Hawaii Sunbeam' were susceptible; and 'Scarlet Ribbon' and 'Hawaii Moon' were highly susceptible. The species *L. saxosum* was immune while *L. cordifolium* cv. clone 2 was highly susceptible.

It must be noted that these results may not always correspond to growers observations in commercial plantings. For example we rated 'Hawaii Sunbeam' susceptible at the research center but we have observed cases of severe infection on some farms. While it is possible that different strains of this fungal pathogen could occur, the most likely explanation is that microclimate variation from farm to farm for those conditions that favor infection, is the reason there appears to be differences in disease reactions. Growers' spray schedules and fungicides they use as well as how well spray coverage is could also explain differences from farm to farm. Also pruning strategy and disposal of infected wood.

Although *L. saxosum* has a relatively small flower and sprawling growth habit, we have been hybridizing it with species and hybrids having larger flowers and a more upright plant stature. Seedlings from crosses made two years ago are expected to bloom for the first time during the 1996-97 flowering season. They will be inoculated with *Sphaceloma* to determine if scab disease resistance has been inherited.

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## Enhanced Winter Flowering of Plumeria with Ethephon

Richard A. Criley  
Researcher, Horticulture, CTAHR

(Abstract from *Acta Horticulture* 1995. 394.)

Over several seasons, foliar sprays of whole trees of plumeria 'Celadine' with 800 mg ethephon/liter of water plus 2 ml X-77 spreader caused complete defoliation in about two weeks. Four to six weeks after treatment, ethephon-treated trees were forcing new leaves and flowers, while untreated trees remained dormant. Treated trees flowered 10 to 13 weeks after treatment. September treatment brought flowering forward into December and October treatment into January, while November and December-treated trees produced buds and flowers at the same rate as untreated trees, peaking in March and April. The value of this research is to enhance the availability of a flower typically used to welcome tourists in Hawaii's vacation industry during a season when flower availability is low.

Ethephon is now registered for use on plumeria to promote winter flower production as Florel™ (EPA Reg. No. 264-263) and Ethephon 2™ (EPA Reg. No. 51036-243). The EPA Special Local Needs numbers assigned

to these registrations are HI-960006 and HI-960004 respectively. Contact your local agricultural chemical supplier for a label and application instructions.

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## Miticides Evaluated in Alabama

*Adapted from Nursery Management and Production, July 1966*

Researchers at the Agricultural Experiment Station, Mobile, AL, evaluated effectiveness of several chemicals on Southern red mite, *Oligonychus ilicis*, a major pest on azalea in the Southeast.

Mite infested 1-gallon 'Tradition' azaleas growing in pine bark and peat were treated on upper and lower leaf surfaces. The plants were evaluated one week after spraying. Samples size was the terminal quarter-inch of three leaves.

| Treatment                 | Rate/100 gal of water | Av. number of mites/sample |
|---------------------------|-----------------------|----------------------------|
| Pentac Aquaflow           | 16 fl oz              | 1.0                        |
| Kelthane 35W              | 1 lb                  | 0.03                       |
| Tame 2.4 EC + Orthene 75S | 10.6 fl oz + 1 lb     | 7.8                        |
| Orthene 75S               | 1 lb                  | 3.8                        |
| Mavrik Aquaflow 2F        | 10 fl oz              | 37.0                       |
| Telstar T&O 10WP          | 1 lb                  | 45.8                       |
| Sunspray 6E               | 1 gal                 | 1.5                        |
| Avid 0.15 EC              | 4 fl oz               | 22.5                       |
| Margosan-O 0.3%           | 64 fl oz              | 19.5                       |
| M-Pede 49%                | 2 gal                 | 4.8                        |
| Untreated control         | -                     | 50.3                       |

For more information: James Stephenson, AL Ag. Ext. Stn., POB 8276, Mobile, AL 36608

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## New Disease Found on Mainland Oleander

A new bacterial disease (bacterial scorch) caused by *Xylella fastidiosa* has been reported on oleander (*Nerium*) in Southern California, according to a recent article in *Southwest Horticulture*. Bacterial scorch causes a yellowing and browning of leaf tips and margins resulting from the blocking of the xylem by the bacteria. Symptoms resemble drought stress. They begin on a single branch or section, usually on older basal leaves, and spread to the tip. The disease spreads eventually

desiccating and killing the entire plant within a year. There are no effective chemical controls. Keeping plants in good health appears to be the best deterrent.

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## Training Course for Pesticide Applicators

*Charles Nagamine  
CTAHR Pesticide Applicator Training Program*

An in-depth 16-1/2 hour training course is open to everyone who wants to prepare for the examination for restricted use pesticide certification. The course will be composed of five 3 to 3-1/2 hour meetings.

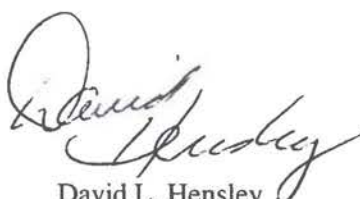
Dates are set for **Hawaii** [Komohana Agriculture Complex (875 Komohana St. in Hilo on February 24, 25, and 26)] and **Maui** [Community Service Building on the MCC campus, on March 18, 19, and 20]. Those interested can register with the Hawaii Department of Agriculture (Hilo 974-4143 and Maui 871-5656). Registration fee is \$100 per person and include a packet of study and reference materials.

Topics include:

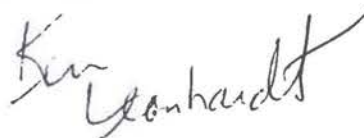
- Pesticide types and formulations
- Importance of label information
- Laws and regulations related to buying, storing, transporting, applying, disposal, and employee protection
- Pest management basics
- Pesticide application equipment
- Calculations for proper dosage and dilution
- Pesticides in the environment
- Hazards to people
- Protective clothing and equipment
- Safe mixing, loading, and application practices
- Transport, storage, and disposal recommendations

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**Thank you.** We hope you've enjoyed this issue of *Landscape, Floriculture, and Ornamentals News*.



David L. Hensley  
Extension Specialists in Horticulture



Kenneth W. Leonhardt